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EXAMINER				
LET, RIP A				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
08/05/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/706,569

Applicant(s)

AHMED ET AL.

Examiner

RIP A. LEE

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-6, 8-10, 14, 15, 17-19, 29 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-6, 8-10, 14, 15, 17-19, 29, and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This office action follows a request for continued examination (RCE) under 37 § C.F.R. 1.114, filed on May 21, 2008. Claims 3-6, 8-10, 14, 15, 17-19, 29, and 32 are pending.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 3-6, 8-10, 14, 15, 17-19, 29, and 32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claims 10 and 29 are drawn to a coated superabsorbent polymer (SAP) particulate having a water absorption property (according to FWA_{15sec} Test) of absorbing 3.6 g or less of water per gram of SAP in about 15 seconds, and when the coating is washed off the SAP particulate, the resulting SAP particulate has a water absorption property (according to FWA_{15sec} Test) of absorbing about 5.7 g or more of water per gram of SAP in about 15 seconds.

Claims contain two open ended ranges. Table 1 lists FWA_{15sec} Test data for a series of SAP coated with different salts. It can be seen that there are a sufficient number of tabulated water absorption values (*viz.*, 3.6, 3.5, 3.4, 3.2, 3.0, 2.8, 1.6, 1.5, 0.8, 0.7, and 0.5) that span the claimed range of “absorbing 3.6 g or less of water per gram of SAP” to reasonably convey to one skilled in the relevant art that that the inventors, at the time the application was filed, had possession of the claimed invention. In other words, coated SAP particulates having a water absorption property within the claimed range of “absorbing 3.6 g or less of water per gram of SAP” are reasonably supported in the disclosure.

Art Unit: 1796

Table 2 lists FWA_{15sec} Test data for SAP particulates that have been washed of their salt coating. The four tabulated values of 5.7, 6.3, 6.6, and 7.2 (corresponding only to those SAP of the type SXM71 coated with CaCl₂, Ca(NO₃)₂, and MgCl₂) does not sufficiently supportive the full range of “about 5.7 g or more of water per gram of SAP” which includes values of 10 g per gram of SAP and 50 g per gram of SAP.

In light of these considerations, it is deemed that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention, namely a coated SAP having a water absorption property of absorbing 3.6 g or less of water per gram of SAP in about 15 seconds and a water absorption property of absorbing about 5.7 g or more of water per gram of SAP in about 15 seconds when the coating is washed off.

3. Claims 5 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Claims recite a water absorption property (according to FWA_{15sec} Test) of absorbing about 2 g or less of water per gram of SAP in about 15 seconds. This property is defined in the disclosure on page 4. While the specification teaches a water absorption property of absorbing about 3 g or less of water per gram of SAP in about 15 seconds, there is inadequate support for the recited range of about 2 g or less of water per gram of SAP in about 15 seconds.

4. Claims 6 and 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Claims recite a water absorption property (according to FWA_{15sec} Test) of absorbing about 1 g or less of water per gram of SAP in about 15 seconds. This property is defined in the disclosure on page 4. While the specification teaches a water absorption property of absorbing

Art Unit: 1796

about 3 g or less of water per gram of SAP in about 15 seconds, there is inadequate support for the recited range of about 1 g or less of water per gram of SAP in about 15 seconds.

5. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The claim is drawn to a SAP particulate exhibiting a water absorption property of absorbing about 3 g or less of water per gram of SAP in about 15 seconds, a centrifuge retention capacity (CRC) of retaining 25 g or more of aqueous saline per gram of SAP, and an absorbency under load (AUL at 0.9 psi) of retaining more than 18 g of aqueous saline per gram of SAP. Methods of carrying out CRC and AUL tests are described on pages 11-14 of the disclosure, however, there is no teaching of SAP exhibiting all three properties as recited in the instant claim. In view of these considerations, it is concluded that the claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

6. Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The claim is drawn to a SAP particulate exhibiting a water absorption property of absorbing about 3 g or less of water per gram of SAP in about 15 seconds, a centrifuge retention capacity (CRC) of retaining 28 g or more of aqueous saline per gram of SAP, and an absorbency under load (AUL at 0.9 psi) of retaining more than 18 g of aqueous saline per gram of SAP. Methods of carrying out CRC and AUL tests are described on pages 11-14 of the disclosure, however, there is no teaching of SAP exhibiting all three properties as recited in the instant claim. In view of these considerations, it is concluded that the claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Art Unit: 1796

7. Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The claim is drawn to a SAP particulate exhibiting a water absorption property of absorbing about 2 g or less of water per gram of SAP in about 15 seconds, a centrifuge retention capacity (CRC) of retaining 25 g or more of aqueous saline per gram of SAP, and an absorbency under load (AUL at 0.9 psi) of retaining more than 18 g of aqueous saline per gram of SAP. Methods of carrying out CRC and AUL tests are described on pages 11-14 of the disclosure, however, there is no teaching of SAP exhibiting all three properties as recited in the instant claim. This is especially evident in light of the fact that there is inadequate support for the recited range of about 2 g or less of water per gram of SAP in about 15 seconds (see paragraph 3, above). In view of these considerations, it is concluded that the claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

8. Claim 19 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The claim is drawn to a SAP particulate exhibiting a water absorption property of absorbing about 1 g or less of water per gram of SAP in about 15 seconds, a centrifuge retention capacity (CRC) of retaining 28 g or more of aqueous saline per gram of SAP, and an absorbency under load (AUL at 0.9 psi) of retaining more than 16 g of aqueous saline per gram of SAP. Methods of carrying out CRC and AUL tests are described on pages 11-14 of the disclosure, however, there is no teaching of SAP exhibiting all three properties as recited in the instant claim. This is especially evident in light of the fact that there is inadequate support for the recited range of about 1 g or less of water per gram of SAP in about 15 seconds (see paragraph 4, above). In view of these considerations, it is concluded that the claim contains subject matter which was not described in

Art Unit: 1796

the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

9. Claim 29 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The claim is drawn to a SAP comprising from about 0.001 % to about 5 % by weight of surface crosslinking agent. This component is described on page 8, line 25 of the disclosure. The specification teaches use of about 0.01 % to about 5 % by weight of surface crosslinking agent. Therefore, it is concluded that the claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention, namely a SAP comprising a lower bound of about 0.001 % by weight of surface crosslinking agent.

Response to Arguments

10. Applicant traverses the rejection of claims over Gartner *et al.* (WO 98/49221; U.S. 6,323,252) in view of evidence provided in Wilson (U.S. 6,579,958) and in Aberson *et al.* (U.S. 4,548,847), set forth in the final office action dated February 21, 2008. Applicant also traverses the rejection of claims over Inger *et al.* (U.S. 7,157,141) in view of evidence provided in Wilson (U.S. 6,579,958) and in Aberson *et al.* (U.S. 4,548,847). A declaration under 37 C.F.R. 1.132 submitted by Dr. Iqbal Ahmed accompanies Applicant's response filed May 21, 2008.

Examiner wishes to thank Applicant for furnishing information provided in the declaration. Applicant's arguments have been considered fully in conjunction with explanations provided in the declaration, and the preponderance of evidence rests with Applicant. Wilson and Aberson *et al.* disclose reversibility of ions in a specific fact pattern, and this does not translate to removability of the salt (although containing metal ions) coating of a SAP, as described in the instant claims. Furthermore, Gartner *et al.* relies on application of aqueous salt solution to SAP so that the SAP exhibits more homogeneous distribution of crosslinkers or other surface

Art Unit: 1796

treatment additives. A secondary function of the aqueous salt solution is to crosslink further the SAP in order to reduce absorption capacity of the SAP. Gartner *et al.* does not disclose removal (washing) of the aqueous salt solution once applied, and doing so would contradict the purpose of the invention. Similarly, Inger *et al.* teaches post-treatment of SAP with a solution of a salt of a trivalent cation in order to restore gel permeability of a SAP that has been damaged by mechanical action. Inger *et al.* does not disclose removal (washing) of the aqueous salt solution once applied, and removal of the solution would be counterproductive. In light of these considerations, it is concluded that a *prima facie* case of obviousness can not be established with the combination of references cited. Accordingly, both sets of rejections have been withdrawn.

Conclusion

11. Claims are free of the prior art. To date, references Ganslaw *et al.* (U.S. 4,043,952), Mertens *et al.* (U.S. 6,620,889), Harada *et al.* (U.S. 5,115,011), Cook *et al.* (U.S. 6,562,743), Gartner *et al.* (WO 98/49221; U.S. 6,323,252), Inger *et al.* (U.S. 7,157,141), and Wilson (U.S. 6,579,958) have been cited during prosecution. These references relate to treatment of superabsorbent particles with metal salt (metal cation) for improving overall core permeability and for surface crosslinking. The references are deficient in that they do not teach or fairly suggest removal of the metal salt such that one having ordinary skill in the art would have found it obvious to make SAP having the claimed features.

The following references are relevant:

Qin *et al.* (U.S. 2004/0214499) teaches spray application of a solution of $\text{Al}_2(\text{SO}_4)_3$ onto SAP particles; other polyvalent metal salts may be utilized.

Dodge *et al.* (U.S. 6,696,618) teaches use of monovalent salts having different ionic strength to control absorbency of a superabsorbent material.

Smith *et al.* (U.S. 7,241,820) discloses a process for making superabsorbent particles using aluminum salts as crosslinking agent.

Art Unit: 1796

Weir *et al.* (U.S. 6,433,058) discloses treatment of SAP with a polyvalent metal salt such that the metal salt diffuses into the polymer resulting in a SAP having a absorption rate index of at least about 5 minutes.

Fujiura *et al.* (U.S. 5,002,986) discloses ionic surface crosslinking of SAP with a salt of a polyvalent metal in order to achieve rapid absorbency.

Johnson *et al.* (U.S. 5,684,106) teaches surface crosslinking of SAP particles with aluminum sulfate or sodium aluminate.

None of these references teaches the subject matter of the instant claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu S. Jagannathan, can be reached at (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

/Rip A. Lee/
Art Unit 1796

July 30, 2008